CLAIMS

What is claimed is:

1. A method of manufacturing an annular bead comprising an elastomeric component and at least one thread component for a tire comprising the steps of:
   a. locating a toroidal support;
   b. placing an applicator nozzle in an interference position to the toroidal support;
   c. placing and at least for a period of time simultaneously applying through the nozzle a sufficiently elongate stream of the elastomeric component in a substantially semi-solid state and a sufficiently elongate length of the at least one thread component disposed within the stream onto the toroidal support in a predetermined bead configuration.

2. A method of manufacturing an annular bead according to claim 1, further comprising the step of pre-layering an elastomeric tire layer on the toroidal support.

3. A method of manufacturing an annular bead according to claim 2, further comprising the step of rotating the toroidal support during application of the elastomeric component and the at least one thread component from the nozzle.

4. The method of manufacturing an annular bead according to claim 1, further comprising the step of rotating the toriodal support and the elastomeric layer thereon simultaneously with application of the elastomeric and at least one thread component from the application nozzle.

5. The method of manufacturing an annular bead according to claim 1, further comprising the step of at least partially defining the predetermined

bead configuration at an application point of the application nozzle by a relief in the nozzle.

6. The method of manufacturing an annular bead according to claim 5, further comprising the step of at least partially defining a side of the predetermined bead configuration by the toroidal support.

7. The method of manufacturing an annular bead according to claim 6, further comprising the step of defining at least three sides of the predetermined bead configuration by at least three sides of the relief in the nozzle and at least one side by the toroidal support.

8. The method of manufacturing an annular bead according to claim 1, further comprising the step of pressurizing the elastomeric component at an elevated temperature within the nozzle prior to application.

9. The method of manufacturing an annular bead according to claim 1, further comprising the steps of positioning the at least one thread at a preferred location within the stream and maintaining the at least one thread in the preferred location during a post-application curing of the elastomeric component.

10. The method of manufacturing an annular bead according to claim 9, wherein the preferred location of the at least one thread is substantially in the middle of the stream.

11. An apparatus for forming an annular bead for a tire of a type comprising an elastomeric component and at least one thread component, the apparatus comprising:

a. a toroidal support;

b. nozzle means disposed in an interference relationship with the toroidal support;

c. the nozzle means ejecting a sufficiently elongate stream of the elastomeric component in a substantially semi-solid state and a sufficiently elongate length of the at least one thread component disposed within the stream onto the toroid support in a predetermined bead configuration.

12. An apparatus according to claim 11 further comprising means for rotating the toroidal support relative to the nozzle means.

13. An apparatus according to claim 11 wherein the nozzle means includes a relief at an ejection portal for at least partially defining the predetermined bead configuration.

14. An apparatus according to claim 13 wherein the predetermined bead configuration is at least partially defined by the toroidal support and the ejection portal relief.

15. A tire formed having an annular bead comprising an elastomeric component and at least one thread component, the tire being formed by the process comprising the steps:

a. locating a toroidal support surface;

b. placing an ejector nozzle in an interference position to the toroidal support surface;

c. placing and at least for a period of time simultaneously ejecting through the nozzle a sufficiently elongate stream of the elastomeric component in a sufficiently semi-solid state and a sufficiently elongate length of the at least one thread component disposed within the stream onto the elastomeric layer in a predetermined bead configuration.

16. A tire formed by the process according to claim 15, further comprising the step of rotating the toroidal support relative to the nozzle simultaneously

with ejection of the elastomeric component and at least one thread component from the ejector nozzle.

17. A tire formed by the process according to claim 16, further comprising the step of at least partially defining the predetermined bead configuration by a relief in the nozzle at an ejection portal.

18. A tire formed by the process according to claim 17, further comprising the step of defining at least three sides of the predetermined bead configuration by at least three sides of the relief in the nozzle and at least one side by the toroidal support.

19. A tire formed by the process according to claim 18, further comprising the step of positioning the at least one thread at a preferred location within the stream simultaneously with rotation of the toroidal support and ejection of the elastomeric component and at least one thread component from the ejector nozzle.